



Physics - B.A.

College of Arts and Sciences

The Department of Physics and Astronomy helps many students acquire a general understanding and appreciation of physics and astronomy.

120 hours (minimum)

Any student earning a Bachelor of Arts (BA) degree must complete a minimum of 39 hours at the 300+ level.

University Studies Program Requirements

- I. Math (completed by Premajor Requirement)
II. Foreign Language (placement exam recommended)
III. Inference-Logic (completed by Premajor Requirement)
IV. Written Communication
VI. Natural Sciences (completed by Premajor Requirement)
VII. Social Sciences
VIII. Humanities
IX. Cross-Cultural (choose a 300+ level PHI course)
X. Electives (choose 300+ level Social Science courses)
USP hours: 21-33

Graduation Writing Requirement

Students may satisfy the Graduation Writing Requirement by completing PHY 435.

Graduation Writing Requirement Hours: 3

College Requirements

- I. Foreign Language (placement exam recommended)
II. Disciplinary Requirements
a. Natural Science (completed by Premajor Requirements)
b. Social Science (completed by USP Elective Requirement)
c. Humanities (partially completed by USP Cross-Cultural Requirement)
III. Laboratory or Field Work (completed by Premajor Requirement)
IV. Electives

College Requirement hours: 9-17

Premajor Requirements

- *PHY 231/232/241/242 General University Physics and Laboratory ... 10
or with permission of the Director of Undergraduate Studies:
PHY 211/213 General Physics ... (10)
PHY 228 Optics, Relativity and Thermal Physics
CHE 105 General College Chemistry I
CHE 107 General College Chemistry II
*MA 113 Calculus I
MA 114 Calculus II
Premajor hours: 27

Major Requirements

Major Core Requirements

- PHY 306 Theoretical Methods of Physics
PHY 361 Principles of Modern Physics
PHY 404G Mechanics
PHY 416G Electricity and Magnetism
PHY 520 Introduction to Quantum Mechanics
MA 213 Calculus III
MA 214 Calculus IV

Major Core hours: 22

Other Course Work Required for the Major

Choose 3-6 hours at the 400+ level to include at least one of the following laboratory courses: PHY 402G, 422, 435, 535, 545

From Outside the Major Department

Choose 14-17 hours outside Physics at the 300+ level. Courses are generally chosen from computer science, engineering, mathematics, philosophy, or statistics.

Other Major hours: 20

Total Minimum Hours Required for Degree 121

*Course used towards completion of a USP Requirement.

Suggested Curriculum for B.A. in Physics

As you plan your physics studies, please note that upper division physics courses, PHY 3XX and all higher numbered courses, are offered once per year in the semester indicated on the suggested curricula.

Freshman Year

Table with 2 columns: Course Name, Hours. Rows include PHY 231, PHY 241, MA 113, ENG 104, and University Studies.

Second Semester

Table with 2 columns: Course Name, Hours. Rows include PHY 228, MA 114, CHE 105, and University Studies.

Sophomore Year

Table with 2 columns: Course Name, Hours. Rows include PHY 232, PHY 242, *MA 213, CHE 107, and Foreign Language.

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Second Semester

PHY 306 Theoretical Methods of Physics	3
PHY 361 Principles of Modern Physics	3
*MA 214 Calculus IV	3
Foreign Language	4

Junior Year

First Semester

	Hours
*CS 115 Introduction to Computer Programming	3
PHY 404G Mechanics	3
PHY 335 Data Analysis for Physicists	1
*MA 322 Matrix Algebra and Its Applications	3
**Humanities	3
Foreign Language	3

Second Semester

MA 432G Methods of Applied Mathematics I	3
PHY 520 Introduction to Quantum Mechanics	3
Foreign Language	3
**Social Science	3
**Humanities	3

Senior Year

First Semester

	Hours
PHY 416G Electricity and Magnetism	3
PHY 554 Fundamentals of Atomic Physics	3
**Social Science	3
University Studies	6
*Elective	3

Second Semester

PHY 435 Intermediate Physics Laboratory	3
Foreign Language (if needed)	3
University Studies (if needed)	6
Elective	3

**A total of 14 credit hours in math, computer science, chemistry, engineering or other areas related to physics but outside the department must be completed to satisfy the college requirement. A total of 42 hours in physics and related areas must be taken to satisfy the major requirement.*

***The Bachelor of Arts requires the completion of six additional hours in humanities and social sciences beyond those required for University Studies. It also requires the completion of 39 hours at or above the 300 level.*